RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.

Application Serial Number: 10/565,371
Source: IFW
Date Processed by STIC: 1/27/06

ENTERED

CRF Errors Edited by the STIC Systems Branch

Serial Number: 10/565,371 CRF Edit Date: 1/30/06
Edited by: MV

___ **Realigned nucleic acid/amino acid numbers/text in cases where the sequence text "wrapped" to the next line**

___ **Corrected the SEQ ID NO. Sequence numbers edited were:**

_____

___ **Inserted or corrected a nucleic number at the end of a nucleic line. SEQ ID NO's edited:**

_____

✓ **Deleted:** ✓ **invalid beginning/end-of-file text ; ___ page numbers**

___ **Inserted mandatory headings/numeric identifiers, specifically:**

_____

___ **Moved responses to same line as heading/numeric identifier, specifically:**

_____

___ **Other:**

_____
_____
_____

Revised 09/09/2003

IFWP

RAW SEQUENCE LISTING DATE: 01/30/2006
PATENT APPLICATION: **US/10/565,371** TIME: 16:04:02

Input Set : **A:\PTO.AMC.txt**
Output Set: **N:\CRF4\01302006\J565371.raw**

```
      <110> APPLICANT: TRANSGENE S.A.
      <120> TITLE OF INVENTION: Novel multifunctional cytokines
      <130> FILE REFERENCE: H2216 PCT S3
C--> <140> CURRENT APPLICATION NUMBER: US/10/565,371
C--> <141> CURRENT FILING DATE: 2006-01-23
      <150> PRIOR APPLICATION NUMBER: PCT/EP2004/008114
      <151> PRIOR FILING DATE: 2004-07-20
      <150> PRIOR APPLICATION NUMBER: EP 03 36 0086.7
      <151> PRIOR FILING DATE: 2003-07-21
      <150> PRIOR APPLICATION NUMBER: US 60/539,320
      <151> PRIOR FILING DATE: 2004-01-28
      <160> NUMBER OF SEQ ID NOS: 59
      <170> SOFTWARE: PatentIn version 3.1
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      <211> LENGTH: 345
      <212> TYPE: PRT
      <213> ORGANISM: artificial sequence
      <220> FEATURE:
      <221> NAME/KEY: source
      <223> OTHER INFORMATION: /note= "Description of artificial sequence: fusion human
            IL-7/linker/human IL-2"
      <400> SEQUENCE: 1
Met Phe His Val Ser Phe Arg Tyr Ile Phe Gly Leu Pro Pro Leu Ile
1               5                  10                  15
Leu Val Leu Leu Pro Val Ala Ser Ser Asp Cys Asp Ile Glu Gly Lys
            20                  25                  30
Asp Gly Lys Gln Tyr Glu Ser Val Leu Met Val Ser Ile Asp Gln Leu
        35                  40                  45
Leu Asp Ser Met Lys Glu Ile Gly Ser Asn Cys Leu Asn Asn Glu Phe
    50                  55                  60
Asn Phe Phe Lys Arg His Ile Cys Asp Ala Asn Lys Glu Gly Met Phe
65                  70                  75                  80
Leu Phe Arg Ala Ala Arg Lys Leu Arg Gln Phe Leu Lys Met Asn Ser
                85                  90                  95
Thr Gly Asp Phe Asp Leu His Leu Leu Lys Val Ser Glu Gly Thr Thr
            100                 105                 110
Ile Leu Leu Asn Cys Thr Gly Gln Val Lys Gly Arg Lys Pro Ala Ala
        115                 120                 125
Leu Gly Glu Ala Gln Pro Thr Lys Ser Leu Glu Glu Asn Lys Ser Leu
    130                 135                 140
Lys Glu Gln Lys Lys Leu Asn Asp Leu Cys Phe Leu Lys Arg Leu Leu
145                 150                 155                 160
Gln Glu Ile Lys Thr Cys Trp Asn Lys Ile Leu Met Gly Thr Lys Glu
```

RAW SEQUENCE LISTING DATE: 01/30/2006
PATENT APPLICATION: **US/10/565,371** TIME: 16:04:02

Input Set : **A:\PTO.AMC.txt**
Output Set: **N:\CRF4\01302006\J565371.raw**

```
85                  165                 170                 175
88 His Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
89              180                 185                 190
92 Met Tyr Arg Met Gln Leu Leu Ser Cys Ile Ala Leu Ser Leu Ala Leu
93          195                 200                 205
96 Val Thr Asn Ser Ala Pro Thr Ser Ser Ser Thr Lys Lys Thr Gln Leu
97      210                 215                 220
100 Gln Leu Glu His Leu Leu Leu Asp Leu Gln Met Ile Leu Asn Gly Ile
101 225                 230                 235                 240
104 Asn Asn Tyr Lys Asn Pro Lys Leu Thr Arg Met Leu Thr Phe Lys Phe
105                 245                 250                 255
108 Tyr Met Pro Lys Lys Ala Thr Glu Leu Lys His Leu Gln Cys Leu Glu
109             260                 265                 270
112 Glu Glu Leu Lys Pro Leu Glu Glu Val Leu Asn Leu Ala Gln Ser Lys
113         275                 280                 285
116 Asn Phe His Leu Arg Pro Arg Asp Leu Ile Ser Asn Ile Asn Val Ile
117     290                 295                 300
120 Val Leu Glu Leu Lys Gly Ser Glu Thr Thr Phe Met Cys Glu Tyr Ala
121 305                 310                 315                 320
124 Asp Glu Thr Ala Thr Ile Val Glu Phe Leu Asn Arg Trp Ile Thr Phe
125                 325                 330                 335
128 Cys Gln Ser Ile Ile Ser Thr Leu Thr
129             340                 345
132 <210> SEQ ID NO: 2
134 <211> LENGTH: 333
136 <212> TYPE: PRT
138 <213> ORGANISM: artificial sequence
140 <220> FEATURE:
141 <221> NAME/KEY: source
142 <223> OTHER INFORMATION: /note= "Description of artificial sequence: fusion murine
143       IL7/linker/murine IL-2"
145 <400> SEQUENCE: 2
147 Met Phe His Val Ser Phe Arg Tyr Ile Phe Gly Ile Pro Pro Leu Ile
148 1               5                   10                  15
151 Leu Val Leu Leu Pro Val Thr Ser Ser Glu Cys His Ile Lys Asp Lys
152             20                  25                  30
155 Glu Gly Lys Ala Tyr Glu Ser Val Leu Met Ile Ser Ile Asp Glu Leu
156         35                  40                  45
159 Asp Lys Met Thr Gly Thr Asp Ser Asn Cys Pro Asn Asn Glu Pro Asn
160     50                  55                  60
163 Phe Phe Arg Lys His Val Cys Asp Asp Thr Lys Glu Ala Ala Phe Leu
164 65                  70                  75                  80
167 Asn Arg Ala Ala Arg Lys Leu Lys Gln Phe Leu Lys Met Asn Ile Ser
168                 85                  90                  95
171 Glu Glu Phe Asn Val His Leu Leu Thr Val Ser Gln Gly Thr Gln Thr
172             100                 105                 110
175 Leu Val Asn Cys Thr Ser Lys Glu Glu Lys Asn Val Lys Glu Gln Lys
176         115                 120                 125
179 Lys Asn Asp Ala Cys Phe Leu Lys Arg Leu Leu Arg Glu Ile Lys Thr
```

RAW SEQUENCE LISTING DATE: 01/30/2006
PATENT APPLICATION: US/10/565,371 TIME: 16:04:02

Input Set : A:\PTO.AMC.txt
Output Set: N:\CRF4\01302006\J565371.raw

```
180     130                 135                 140
183 Cys Trp Asn Lys Ile Leu Lys Gly Ser Ile Gly Gly Gly Gly Ser Gly
184 145                 150                 155                 160
187 Gly Gly Gly Ser Met Tyr Ser Met Gln Leu Ala Ser Cys Val Thr Leu
188                 165                 170                 175
191 Thr Leu Val Leu Leu Val Asn Ser Ala Pro Thr Ser Ser Ser Thr Ser
192             180                 185                 190
195 Ser Ser Thr Ala Glu Ala Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln
196         195                 200                 205
199 Gln Gln His Leu Glu Gln Leu Leu Met Asp Leu Gln Glu Leu Leu Ser
200     210                 215                 220
203 Arg Met Glu Asn Tyr Arg Asn Leu Lys Leu Pro Arg Met Leu Thr Phe
204 225                 230                 235                 240
207 Lys Phe Tyr Leu Pro Lys Gln Ala Thr Glu Leu Lys Asp Leu Gln Cys
208                 245                 250                 255
211 Leu Glu Asp Glu Leu Gly Pro Leu Arg His Val Leu Asp Leu Thr Gln
212             260                 265                 270
215 Ser Lys Ser Phe Gln Leu Glu Asp Ala Glu Asn Phe Ile Ser Asn Ile
216         275                 280                 285
219 Arg Val Thr Val Val Lys Leu Lys Gly Ser Asp Asn Thr Phe Glu Cys
220     290                 295                 300
223 Gln Phe Asp Asp Glu Ser Ala Thr Val Val Asp Phe Leu Arg Arg Trp
224 305                 310                 315                 320
227 Ile Ala Phe Cys Gln Ser Ile Ile Ser Thr Ser Pro Gln
228                 325                 330
231 <210> SEQ ID NO: 3
233 <211> LENGTH: 330
235 <212> TYPE: PRT
237 <213> ORGANISM: artificial sequence
239 <220> FEATURE:
240 <221> NAME/KEY: source
241 <223> OTHER INFORMATION: /note= "Description of artificial sequence: fusion human
242       IL-2/linker/human IL-15"
246 <400> SEQUENCE: 3
248 Met Tyr Arg Met Gln Leu Leu Ser Cys Ile Ala Leu Ser Leu Ala Leu
249 1               5                   10                  15
253 Val Thr Asn Ser Ala Pro Thr Ser Ser Ser Thr Lys Lys Thr Gln Leu
254             20                  25                  30
257 Gln Leu Glu His Leu Leu Leu Asp Leu Gln Met Ile Leu Asn Gly Ile
258         35                  40                  45
261 Asn Asn Tyr Lys Asn Pro Lys Leu Thr Arg Met Leu Thr Phe Lys Phe
262     50                  55                  60
265 Tyr Met Pro Lys Lys Ala Thr Glu Leu Lys His Leu Gln Cys Leu Glu
266 65                  70                  75                  80
269 Glu Glu Leu Lys Pro Leu Glu Glu Val Leu Asn Leu Ala Gln Ser Lys
270                 85                  90                  95
273 Asn Phe His Leu Arg Pro Arg Asp Leu Ile Ser Asn Ile Asn Val Ile
274             100                 105                 110
277 Val Leu Glu Leu Lys Gly Ser Glu Thr Thr Phe Met Cys Glu Tyr Ala
```

RAW SEQUENCE LISTING DATE: 01/30/2006
PATENT APPLICATION: **US/10/565,371** TIME: 16:04:02

Input Set : **A:\PTO.AMC.txt**
Output Set: **N:\CRF4\01302006\J565371.raw**

```
278         115                 120                 125
281 Asp Glu Thr Ala Thr Ile Val Glu Phe Leu Asn Arg Trp Ile Thr Phe
282     130                 135                 140
285 Cys Gln Ser Ile Ile Ser Thr Leu Thr Gly Gly Gly Gly Ser Gly Gly
286 145                 150                 155                 160
289 Gly Gly Ser Gly Gly Gly Gly Ser Met Arg Ile Ser Lys Pro His Leu
290                 165                 170                 175
293 Arg Ser Ile Ser Ile Gln Cys Tyr Leu Cys Leu Leu Leu Asn Ser His
294             180                 185                 190
297 Phe Leu Thr Glu Ala Gly Ile His Val Phe Ile Leu Gly Cys Phe Ser
298         195                 200                 205
301 Ala Gly Leu Pro Lys Thr Glu Ala Asn Trp Val Asn Val Ile Ser Asp
302     210                 215                 220
305 Leu Lys Lys Ile Glu Asp Leu Ile Gln Ser Met His Ile Asp Ala Thr
306 225                 230                 235                 240
309 Leu Tyr Thr Glu Ser Asp Val His Pro Ser Cys Lys Val Thr Ala Met
310                 245                 250                 255
313 Lys Cys Phe Leu Leu Glu Leu Gln Val Ile Ser Leu Glu Ser Gly Asp
314             260                 265                 270
317 Ala Ser Ile His Asp Thr Val Glu Asn Leu Ile Ile Leu Ala Asn Asn
318         275                 280                 285
321 Ser Leu Ser Ser Asn Gly Asn Val Thr Glu Ser Gly Cys Lys Glu Cys
322     290                 295                 300
325 Glu Glu Leu Glu Glu Lys Asn Ile Lys Glu Phe Leu Gln Ser Phe Val
326 305                 310                 315                 320
329 His Ile Val Gln Met Phe Ile Asn Thr Ser
330                 325                 330
333 <210> SEQ ID NO: 4
335 <211> LENGTH: 330
337 <212> TYPE: PRT
339 <213> ORGANISM: artificial sequence
341 <220> FEATURE:
342 <221> NAME/KEY: source
343 <223> OTHER INFORMATION: /note= "Description of artificial sequence: fusion human
344       IL-15/linker/human IL-2"
348 <400> SEQUENCE: 4
350 Met Arg Ile Ser Lys Pro His Leu Arg Ser Ile Ser Ile Gln Cys Tyr
351 1               5                   10                  15
354 Leu Cys Leu Leu Leu Asn Ser His Phe Leu Thr Glu Ala Gly Ile His
355             20                  25                  30
358 Val Phe Ile Leu Gly Cys Phe Ser Ala Gly Leu Pro Lys Thr Glu Ala
359         35                  40                  45
362 Asn Trp Val Asn Val Ile Ser Asp Leu Lys Lys Ile Glu Asp Leu Ile
363     50                  55                  60
366 Gln Ser Met His Ile Asp Ala Thr Leu Tyr Thr Glu Ser Asp Val His
367 65                  70                  75                  80
370 Pro Ser Cys Lys Val Thr Ala Met Lys Cys Phe Leu Leu Glu Leu Gln
371                 85                  90                  95
374 Val Ile Ser Leu Glu Ser Gly Asp Ala Ser Ile His Asp Thr Val Glu
```

RAW SEQUENCE LISTING DATE: 01/30/2006
PATENT APPLICATION: US/10/565,371 TIME: 16:04:02

Input Set : A:\PTO.AMC.txt
Output Set: N:\CRF4\01302006\J565371.raw

```
375                 100                 105                 110
379 Asn Leu Ile Ile Leu Ala Asn Asn Ser Leu Ser Ser Asn Gly Asn Val
380         115                 120                 125
383 Thr Glu Ser Gly Cys Lys Glu Cys Glu Glu Leu Glu Glu Lys Asn Ile
384     130                 135                 140
387 Lys Glu Phe Leu Gln Ser Phe Val His Ile Val Gln Met Phe Ile Asn
388 145                 150                 155                 160
391 Thr Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
392                 165                 170                 175
395 Ser Met Tyr Arg Met Gln Leu Leu Ser Cys Ile Ala Leu Ser Leu Ala
396                 180                 185                 190
399 Leu Val Thr Asn Ser Ala Pro Thr Ser Ser Ser Thr Lys Lys Thr Gln
400         195                 200                 205
404 Leu Gln Leu Glu His Leu Leu Leu Asp Leu Gln Met Ile Leu Asn Gly
405     210                 215                 220
408 Ile Asn Asn Tyr Lys Asn Pro Lys Leu Thr Arg Met Leu Thr Phe Lys
409 225                 230                 235                 240
412 Phe Tyr Met Pro Lys Lys Ala Thr Glu Leu Lys His Leu Gln Cys Leu
413                 245                 250                 255
416 Glu Glu Glu Leu Lys Pro Leu Glu Glu Val Leu Asn Leu Ala Gln Ser
417                 260                 265                 270
420 Lys Asn Phe His Leu Arg Pro Arg Asp Leu Ile Ser Asn Ile Asn Val
421         275                 280                 285
424 Ile Val Leu Glu Leu Lys Gly Ser Glu Thr Thr Phe Met Cys Glu Tyr
425     290                 295                 300
428 Ala Asp Glu Thr Ala Thr Ile Val Glu Phe Leu Asn Arg Trp Ile Thr
429 305                 310                 315                 320
432 Phe Cys Gln Ser Ile Ile Ser Thr Leu Thr
433                 325                 330
436 <210> SEQ ID NO: 5
438 <211> LENGTH: 350
440 <212> TYPE: PRT
442 <213> ORGANISM: artificial sequence
444 <220> FEATURE:
445 <221> NAME/KEY: source
446 <223> OTHER INFORMATION: /note= "Description of artificial sequence: fusion signal
IL-2/
447       human IL-15/linker/human IL-2"
451 <400> SEQUENCE: 5
453 Met Tyr Arg Met Gln Leu Leu Ser Cys Ile Ala Leu Ser Leu Ala Leu
454 1               5                   10                  15
457 Val Thr Asn Ser Met Arg Ile Ser Lys Pro His Leu Arg Ser Ile Ser
458             20                  25                  30
461 Ile Gln Cys Tyr Leu Cys Leu Leu Leu Asn Ser His Phe Leu Thr Glu
462         35                  40                  45
465 Ala Gly Ile His Val Phe Ile Leu Gly Cys Phe Ser Ala Gly Leu Pro
466     50                  55                  60
469 Lys Thr Glu Ala Asn Trp Val Asn Val Ile Ser Asp Leu Lys Lys Ile
470 65                  70                  75                  80
473 Glu Asp Leu Ile Gln Ser Met His Ile Asp Ala Thr Leu Tyr Thr Glu
```

VERIFICATION SUMMARY DATE: 01/30/2006
PATENT APPLICATION: **US/10/565,371** TIME: 16:04:03

Input Set : **A:\PTO.AMC.txt**
Output Set: **N:\CRF4\01302006\J565371.raw**

L:11 M:270 C: Current Application Number differs, Replaced Current Application No
L:11 M:271 C: Current Filing Date differs, Replaced Current Filing Date

Raw Sequence Listing before editing,
for reference only

IFWP

RAW SEQUENCE LISTING DATE: 01/27/2006
PATENT APPLICATION: **US/10/565,371** TIME: 14:34:46

Input Set : **A:\H2216PCT_correctedsequence.txt**
Output Set: **N:\CRF4\01272006\J565371.raw**

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      5 <110> APPLICANT: TRANSGENE S.A.
      7 <120> TITLE OF INVENTION: Novel multifunctional cytokines
      9 <130> FILE REFERENCE: H2216 PCT S3
C--> 11 <140> CURRENT APPLICATION NUMBER: US/10/565,371
C--> 12 <141> CURRENT FILING DATE: 2006-01-23
     14 <150> PRIOR APPLICATION NUMBER: EP 03 36 0086.7
     15 <151> PRIOR FILING DATE: 2003-07-21
     17 <150> PRIOR APPLICATION NUMBER: US 60/539,320
     18 <151> PRIOR FILING DATE: 2004-01-28
     20 <160> NUMBER OF SEQ ID NOS: 59
     22 <170> SOFTWARE: PatentIn version 3.1
```

ERRORED SEQUENCES

Does Not Comply
Corrected Diskette Needed

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   2761 <210> SEQ ID NO: 59
   2763 <211> LENGTH: 49
   2765 <212> TYPE: DNA
   2767 <213> ORGANISM: artificial sequence
   2769 <220> FEATURE:
   2770 <221> NAME/KEY: source
   2771 <223> OTHER INFORMATION: /note= "Description of artificial sequence: 3' linker
primer
   2772       for generating the mIL15/IL2 fusion"
   2776 <400> SEQUENCE: 59
   2777 agagccacct ccgcctgaac cgcctccacc cttgtcatcg tcgtccttg                49
E--> 2780 1
E--> 2783 45
```

VERIFICATION SUMMARY DATE: 01/27/2006
PATENT APPLICATION: **US/10/565,371** TIME: 14:34:47

Input Set : **A:\H2216PCT_correctedsequence.txt**
Output Set: **N:\CRF4\01272006\J565371.raw**

L:11 M:270 C: Current Application Number differs, Replaced Current Application Number
L:12 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:2780 M:254 E: No. of Bases conflict, this line has no nucleotides.
M:254 Repeated in SeqNo=59